Bill's Primer on ADs
By Bill O'Brien

In another life, in another aviation maintenance career, one of the jobs I really hated to do was research airworthiness directives (ADs). Perhaps my phobia was the result of being forced into AD research right out of A&P school. Two days into my new job, I had to learn AD research under the jaundiced eye of my first mentor and teacher, Jack Dunkle, IA. He wasn't an easy man to please. During my first lesson in this old and venerable art of AD research, Jack taught me how to revise the library. I grew old before my time, revising Jack's six, 4-inch thick, three-ring binders containing paper copies of ADs. Heaven help you if you left your finger prints behind or mis-filed an AD.

Much later, as a journeyman mechanic, I went high tech and I found myself in front of a microfiche library. Revision was a snap, compared to the paper, but a microfiche library had its own set of problems. Usually the reader/printer read, but did not print. And I learned how to teach brand new mechanics how to put a fiche under the glass correctly so the information on the screen won't be upside down and backwards.

Today, I use a computer, in concert with a CD rom disk that I can hold in one hand. In that silver disk with the rainbow shine, I have more information at my finger tips and can get it faster than Jack Dunkel's AD books and the microfiche library combined.

As my peers here in the FAA will confirm, I am not a man given to nostalgia, but sometimes sitting in front of the computer I find myself missing the reality of turning the pages of the AD three-ring binder myself, feeling the texture of the paper between my fingers, and catching a fleeting whiff of the tell-tale aroma of government ink.

While the data-holding medium has changed over time, the basic AD research process remains the same. The second lesson in AD research that Jack taught me is as valid today as it was back in 1968.

First, you pull the aircraft maintenance records and equipment list. Then you check if the records and the aircraft/equipment match. Then you check if anything was added to the aircraft but not recorded. Then you hunker down and ritually check every AD on your aircraft, top to bottom, starting with spinner and ending with the tail cone's white navigation light.

Most mechanics find that the airworthiness directives on type certificate products such as airframes, engines, and propellers are fairly easy to look up and straight forward to research because the make and model, serial number, or part number are called out. The real M&M (mechanic's migraine) begins when you have to research the appliances.

It was during such a mental anguish over a Piper PA 23-250 that I realized two things. First, that there were 17 ADs on seat belts that could be applicable to the Piper, and second, that not one aircraft that I have worked on, or will ever work on, will have an identical twin. Every aircraft on the flight line was an only child, different in some way. Sure, they looked the same (I could identify the parents), but they were not all equipped the same. Each aircraft required my individual attention because each one was unique.

If I did not spend enough AD research time, then chances are I would miss an AD. And the third career lesson imprinted on my brain by Jack Dunkel was: "ADs are safety related, mandatory compliance items O'Brien, and if you miss an AD, you can kiss your aviation career goodby!"

WHAT IS AN AD?

Most mechanics and repair stations see an airworthiness directive as sort of a mandatory, do it or die, super service bulletin or presidential order issued by the federal government. While that's not a bad hangar floor analogy to live by, many mechanics do not have a clue about what an AD is and what it can and cannot do. Nor do mechanics know what to do if they do not agree with an AD.

An AD is a mandatory operating rule. A federal aviation regulation, which is issued by the FAA when an unsafe condition exists in an aircraft or product or is likely to exist or develop in other products of the same type design (Ref: Part 39).

HOW MANY KINDS OF ADS ARE THERE?

There are thousands of ADs out there, but there are three major kinds of ADs. The first and most common form of an AD is the Notice of Proposed Rulemaking (NPRM)/final rule. Each one of these ADs must go through the same painful legal process that each new rule change for Part 43 or 91 must endure before it goes on the books.

NPRM/FINAL RULE AD

The first part of the AD process is for the industry, through malfunction and defect (M&D) report or service difficulties reports or the FAA/National Transportation Safety Board (NTSB), through accident/incident investigations, to identification of either a safety problem in the making or an actual unsafe condition. Sometimes the problem identification and AD response is triggered because a foreign civil air authority has found a problem with a U.S. Type Certificated aircraft or related product and brought it to the FAA's attention.

With the problem identified, the FAA then researches the problem. If we determined it to be significant, a NPRM for the new AD is published in the always hard-to-read tiny print, in the Federal Register.

The AD's NPRM will identify the aircraft or product's unsafe condition, propose a solution, and request public comment. After the comment period closes, the final rule is prepared, taking into account all the comments received and reviewed by the FAA. The AD may or may not be changed, as warranted by the comments. Then the AD is signed, issued a Part 39 amendment number and a six-digit AD number, and is again published in the federal register. I failed to mention in detail little additional things in the AD process such as the decisionmaking process, regulatory evaluations, economic impact studies, paperwork reduction act, and dealing with a bevy of government lawyers who say "no" a lot. This NPRM/final rule process can take up to two plus years to complete, and its as much fun for us federal government employees as having a picnic in a litter box.

Usually you can tell if an AD was published under a NPRM just by looking at the method of compliance and interval period. If the fix is a long-term one such as when the AD says at each 500 hours inspect or at each annual inspection performed or identifies specific areas to be inspected, you can be pretty sure that AD went through the NPRM process.

IMMEDIATELY ADOPTED RULE

The next kind of AD that the FAA issues is the immediately adopted rule. This immediately adopted rule means exactly how the AD is issued — immediately! Well, almost immediately. From the government point of view, immediately means that it takes less than six months to get the AD out the door and into your AD library. It can happen in six months vs. about two plus years to publish an AD because the FAA determined that there is a big enough safety problem out there and enough legal justification to do away with the Notice of Proposed Rule making and issue a final rule (AD) with a request for comments.

You can tell if an AD is an immediately adopted AD just by checking to see if the owner/operator is given a relatively short compliance time. For example, the AD must be accomplished in 10 hours or landings/cycles or within 30 to 60 days. This short time line is permitted in order to allow the owner/operator to move his or her aircraft to a maintenance facility to get the AD work done or to get the part(s) ordered.

EMERGENCY OR IMMEDIATE SAFETY OF FLIGHT AD

The third kind of AD is the emergency or telegraphic/priority letter AD. Picture in your mind's eye an AD running through the FAA headquarters building with its loin cloth on fire. The FAA only issues emergency ADs when an unsafe condition exists that is so critical to safety of flight that the FAA requires immediate corrective action on the part of the owner/operators.

Years afterward, you can identify an AD that began its life as an emergency or immediate safety of flight AD when you see in the compliance section of the AD the words, "before further flight." What the AD really says is the aircraft is grounded until the AD is complied with.

The FAA identifies telegraphic emergency ADs it sends to the registered owners with the prefix "t" in front of the number and the last two digit numbers of the first emergency AD begin with -51 and continue in ascending sequential order until the next biweekly period begins. When the emergency rule is finally published in the Federal Register, the "t" prefix will be dropped, but the last two digits of the 51 series will remain.

Now just because the FAA bypasses all the checks and balances and other procedures spelled out in the Administrative Procedures Act doesn't mean that the FAA is not held accountable. There are two rules that apply to the government concerning issuing emergency ADs.

First rule is that the emergency AD is effective only to the people who actually receive it. This is known legally as actual notice. Those operators who do not physically receive the AD do not have to comply with it, even if they hear about it. (Ref AD manual M-8040.1 Page 16)

Now legal opinion not withstanding, an emergency AD is not something you want to avoid doing by using the "if I didn't get it, I won't have to do it" ploy. The reality of the situation is this: when the FAA sends out emergency ADs, and we send it telegraphically or by priority letter, any reasonable individual knows we are not messing around. We really believe that we have a problem that is a people killer.

But sometimes it is hard for us to get the word out. We are required to send the emergency AD to the registered owner of the aircraft. Many times the registered owner is a bank or leasing company, and many of these financial folks really do not know what they have when an emergency AD hits their mail box. So the emergency AD sits in some clerk's in-box until it grows whiskers.

If you are an operator of an aircraft and the aircraft's registration certificate has someone else's name on it, please ensure that a system is in place with the bank or holding/leasing company that you will get all emergency ADs that the FAA issues against your airplane or one of its products.

The second rule that the government must comply with is that the identical emergency AD that was sent out originally must be published in the Federal Register. Once published, the AD now becomes mandatory for all owners and operators. I know it sounds like it would be easier if we just published it in the Federal Register like we do with the immediately adopted rule and not go through the trouble with telegrams and the like, but with the emergency AD process, the enemy is time. The government publication process needs 30 days to schedule printing space in the Federal Register and with an emergency safety of flight problem we cannot afford to wait 30 days.

WHY CAN THE FAA PUBLISH THE AD REFERENCE MATERIAL?

The Administrative Procedures Act requires that every regulation must be complete "on its face" when published. This means that all information necessary to comply with that regulation, including those portions drawn from technical reference material, should be contained within the AD.

In 1946, the volume of regulations published in the Federal Register became so overwhelming, when all of this supplemental technical material was published, that Congress provided that this material may be "incorporated by reference" into the regulations. In addition, the law requires that such referenced material be reasonably available to all persons affected by the rule.

But times change and so do laws and regulations. Maybe in this new world of electronic input, internet access, and the world of information transfer, a mechanic or two might recommend to the FAA that reference data for each new AD be made available on the FAA website. (Hint.)

WHAT ELSE CAN AN AD DO?

ADs can be issued against surplus military aircraft which have been issued civilian type certificates, amateur-built aircraft, or to aircraft or products currently moving down a production line.

ADs are the only legal way that the FAA has to change life limits on aircraft or products to make their life limits more restrictive. ADs are also used to revise FAA-approved flight manuals, required mandatory inspection, or maintenance to alterations and repairs previously approved under a FAA supplemental type certificate (STC).

An AD can be issued for maintenance-related defects performed by individual mechanics or repair stations. ADs can be issued to suspend or revoke an aircraft's airworthiness certificate. For those of you a little long in the tooth, you might remember FAA Administrator Langhorn bond issuing an emergency AD that suspended the airworthiness certificates of all DC-10 aircraft after the tragic accident in Chicago on May 25, 1979.

WHAT CAN YOU DO ABOUT AN AD?

If you do not like a particular AD, don't throw rocks at the local FSDO. You have a couple of options in front of you. First, you have the alternative methods of compliance option. If the AD allows, and if you can prove to the FAA that your alternative method provides an acceptable level of safety, there is a chance that the FAA will grant your request. But keep in mind that your alternative method will be reviewed by the FAA aircraft certificating office that wrote the AD and their response must be coordinated with the FAA aircraft evaluation group. This will take time.

The next option you can choose is to petition for exemption. You can write a petition for relief from all or some of the requirements of an AD. However, keep in mind you better have good reasons and that it would be in the public interest — not just in your economic interest. To petition for exemption, you must first look up Part 11, Section 11.25. This powerful rule will give you the information and procedures to petition the FAA for exemptions from all or part of the AD. The petition process usually takes four months to go through. This may seem long, but with the exemption process you have a 50/50 chance of getting it.

The third option is a petition for reconsideration within 30 days of the rule's publication in the Federal Register as provided in Part 11, Section 11.93. What this option requires is for you to make a brief statement of the complaint and include an explanation as to why the rule is contrary to the public interest. The FAA, after 30 days of the receipt of the complaint, must draft a letter of response to the petitioner for the FAA administrator's signature. You will get your answer in a little over 30 days. The answer might be no, but it would be straight from the boss.